UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,771	09/10/2003	Eric Lacroix	33808F0343	4077

441 7590 09/03/2008

SMITH, GAMBRELL & RUSSELL
1130 CONNECTICUT AVENUE, N.W., SUITE 1130
WASHINGTON, DC 20036

EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	PAPER NUMBER
1793	
MAIL DATE	DELIVERY MODE
09/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/658,771	LACROIX ET AL.	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8 and 11-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8, 11-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 19, 2008 has been entered.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 11-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cheminal et al (5,523,500).

Cheminal '500 discloses a process for fluorination of halogenated hydrocarbons by gas phase catalysis (note column 1, lines 11-15).

As disclosed in "Fluorination Examples", HF and 1-chloro-2,2,2-trifluoroethane (F133a) is used as the reactants (note column 10, lines 61-67).

The catalyst is a catalyst based on nickel and chromium oxides (note claim 1 and Examples 1-5, 9, 11).

In the instant claims, the only positive limitation for the catalyst is the Ni/Cr of between 0.02 and 0.4:1

In Examples 13-15, the HF/F133a ratio is from 3.8 to 4.2, the contacting time is from 3.8 to 4.1 seconds, the temperature is 350°C, the pressure is at atmospheric pressure, the reaction is carried in the absence of oxygen (note column 11, lines 21-24 and Table 1). Catalysts A and D have Ni/Cr atomic ratio of 0.34 and 0.07, respectively.

In examples 16-17, the HF/F133a ratio is 5.1, the contacting time is from 19.6 to 19.7 seconds, the temperature is 350°C, the pressure is at 1.5 MPa, the reaction is carried in the presence of oxygen (note column 12, lines 15-20 and Table 2). Catalyst e has a Ni/Cr atomic ratio of 0.37.

In Examples 18-20, the HF/F133a ratio is from 3.9 to 4.0, the contacting time is from 4.0 to 4.8 seconds, the temperature is 350°C, the pressure is at atmospheric pressure, the reaction is carried in the absence of oxygen (note column 12, lines 53-56 and Table 3). The catalyst can be regenerated by treatment under air at 300°C for 24 hours (note column 12, lines 57-61).

Cheminal '500 discloses a list of compounds that me be used as starting halogenated hydrocarbons which include $CCl_2=CCl_2$ (which is considered the same as "perchloroethylene) (note column 5, lines 7-19).

Cheminal '500 discloses that the fluorination reaction temperature depends on the reaction and the desired reaction products. Thus, for partial replacement of chlorine atoms by fluorine, the reaction is carried out at temperatures of between 50-350°C; the replacement of all the chlorine atoms may require temperatures of between 300-500°C (note column 5, lines 34-40).

The contact time also depends on the reaction and the desired products. In general it is between 3 and 100 seconds, preferably less than 30 seconds (note column 5, lines 41-45).

The HF/organic compounds molar ratio may vary between 1/1 to 20/1 (note column 5, lines 46-50) and the operating pressure is preferably between 1 and 20 bars absolute (0.1 to 2 MPa) (note column 5, lines 51-52).

The process of Cheminal '500 anticipates the claimed process.

For the limitations (a)-(c) after "prepared by" in the instant claim 1 and in claim 18 are considered as "product-by-process" limitations.

Alternatively, if there is any difference due to the product-by-process limitations for making the catalyst used in the claimed process, however, when the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. It should be noted that the BET specific surface area and the pore volume of the chromium oxide are for the starting chromium oxide, not for the catalyst final product.

Claims 8, 11-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheminal '500.

Cheminal '500 discloses a process as stated above.

For other halogenated hydrocarbon beside the exemplified 1-chloro-2,2,2-trifluoroethane (F133a) (which is considered the same as the claimed "1-chloro-2,2,2-trifluoroethane"), it would have been obvious to one of ordinary skill in the art to use other reactants in the process of Cheminal '500 as long as such reactants are halogenated hydrocarbons that can be fluorinated by HF.

For other values for fluorination temperature, contacting time, etc., it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the instantly claimed ranges through process optimization, since it has been held that there the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215.

Applicant's arguments filed June 19, 2008 have been fully considered but they are not persuasive.

Applicants argue that Cheminal '500 relates to mass catalyst based on chromium and nickel oxides obtained from a process including fluid colloidal solution (sol) deposition, which are not the same structure as claimed by Applicants.

Applicants have not provided sufficient evidence to show that the structure of the catalyst as disclosed in Cheminal '500 is different that that of the catalyst used in Applicants' claimed process. Moreover, Applicants' claims are to a process for catalytic fluorination of saturated or olefinic halogenated hydrocarbons using a bulk catalyst having a Ni/Cr atomic ratio between 0.02 and 0.4:1, thus, as long as the catalyst as disclosed in Cheminal '500 has the same Ni/Cr atomic ratio, it would sufficiently promote the fluorination of saturated or olefinic halogenated hydrocarbons, regardless of whether or not it has the same structure as the catalyst of the claimed invention.

Applicants argue that Cheminal '500 does not disclose or render obvious the use a catalyst prepared by using a chromium oxide having a BET specific surface area of greater than 150 m^2/g and a pore volume of greater than 0.15 ml/g.

It is noted that the surface area and pore volume as stated above are for the starting chromium oxide, not for the final bulk catalyst. Since the catalyst in the claimed invention was formed by impregnating an amorphous chromium III oxide with a solution of nickel compound, the nickel compound would at least take up some of the pore volume and thereby reducing both the surface area and the pore volume of the starting chromium oxide and the resulting surface area and pore volume of the final catalyst in the claimed invention might be the same as the values disclosed in Cheminal '500. Again, these limitations are considered as "product-by-process" limitations, Applicants have not provided any comparative examples to show that the catalyst used in the claimed invention would provide a better result for a catalytic fluorination as compared to when the catalyst as disclosed in Cheminal '500 was used.

Applicants argue that Applicants' catalysts are novel and the face that they perform better or worse than the catalysts of Cheminal '500 is of no consequence.

As stated in the above rejection, the only positive limitation for the claimed catalyst is the Ni/Cr molar ratio and the catalyst used in Cheminal '500 has the same Ni/Cr molar ratio. In order to overcome the rejections, there must be some showing to show that the catalyst used in the claimed invention is different or there is some unexpected result or criticality when the claimed catalyst is used as compared to the catalyst of Cheminal '500.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on a Part time schedule schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ngoc-Yen M. Nguyen/
Primary Examiner, Art Unit 1793

nmn
September 4, 2008